

Application Serial No. 10/577,017
Reply to office action of November 2, 2009

PATENT
Docket: CU-4798

Remarks and Arguments

Reconsideration is respectfully requested.

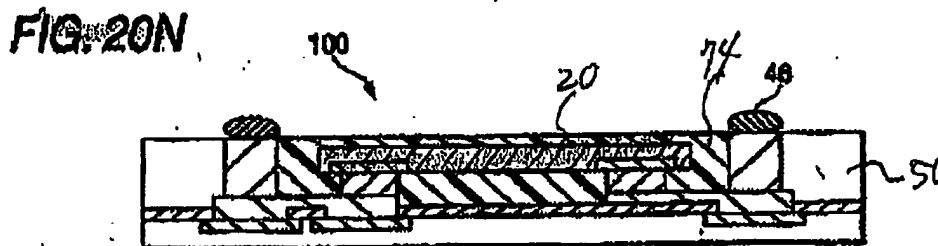
Claims 1-3, 5-12 and 16-17 are pending in the present application before this amendment. By the present amendment, claims 1, 2, 5, and 16 have been amended; and new claim 18 has been added. No new matter has been added.

In the office action (page 2), claims 1-3, 5-11, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0070064 (Yamane) in view of U.S. Patent Application Publication No. 2004/0084781 (Ahn) in view of U.S. Patent Application Publication No. 2003/0038415 (Anderson). The "et al." suffix is omitted in a reference name.

Combining the feature of "silicon" of Ahn with the structure of FIG. 20N of Yamane as suggested by the examiner requires replacing the resin layer 74 of Yamane with silicon. However, The applicants respectfully submit that the replacement of a thick resin layer with a silicon layer is very difficult and nearly impossible as previously argued in detail (for example see page 7 of the response filed on April 6, 2009).

Independent claims 1, 2, and 16, as amended, have been amended to recite not merely silicon wafer, but rather --silicon wafer piece--, which is a solid silicon crystal body cut from a silicon wafer (specification page 24, lines 26-27). It should be noted that a silicon wafer is a solid silicon disk sliced from a silicon ingot.

Thus, there is no way to combine the teachings of Ahn with Yaman, as suggested by the examiner, and replace the resin layer 74 with the silicon wafer piece in the structure of FIG. 20N of Yamane as reproduced below.



The applicants respectfully submit that it is impossible to cut a cavity inside a

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silicon wafer piece used in place of the resin layer 74 for accommodating therein a semiconductor chip 20.

That is, the applicants respectfully submit that it is not possible for a person having ordinary skill in the art to derive the structure as set forth in claim 1 from any combination of Yamane, Ahn, and Anderson.

Accordingly, the applicants respectfully submit that Yamane, Ahn and Anderson, whether considered alone or in any reasonable combination, fail to teach or even suggest each and every feature of the present invention as amended above, at least because none of Yamane, Ahn, and Anderson teaches the claimed --silicon wafer piece--. As such, the applicants respectfully request withdrawal of the aforementioned rejection and earnestly solicit an indication of allowable subject matter with regard to claims 1, 2, and 16, at least for the reasons above.

Claims 3 and 5-12 each depend from either claim 1 or claim 2. Accordingly, the applicants respectfully submit that these claims are in condition for allowance at least by virtue of their dependency as well as the additional limitations recited therein.

In the office action (page 4), claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamane in view of Anderson, and further in view of U.S. Publication No. 2004/0150104 (Terul). In the office action (page 5), the examiner rejects claim 17 under 35 U.S.C. §103(a) as being unpatentable over Yamane in view of Anderson, and further in view of U.S. Publication No. 2003/0185484 (Chakravorty et al).

Claim 12 and claim 17 depend from claim 1 or 2 and claim 16 respectively. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, in light of the above discussion of claims 1-2 and 16, the applicant submits that claims 12 and 17 are also allowable at least by virtue of their dependency as well as the additional limitations recited by each of these claims.

Additionally, a new claim 18, which depends from claim 1, has been added. Claim 18 includes the feature --the portion of the interposer base and the portion of the electronic element that are in direct contact with each other are the same material--;

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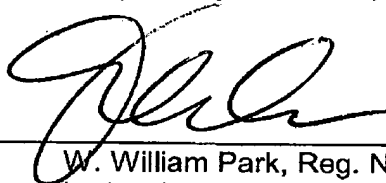
support is found at least in the specification page 21, lines 9-19; thus no new matter has been added. As recited in new claim 18, the interposer base and the portion of the electronic element are formed of the same material, therefore a joining force between the semiconductor chip 11 and the interposer base 21A is increased and reliability of the semiconductor device 10A is improved (specification page 21, lines 9-19).

The applicants respectfully submit that no combination of the cited references teaches or even suggests the features of claim 18, and also submit that claim 18 should be allowable at least by virtue of its dependency on claim 1

For the reasons set forth above, the applicants respectfully submits that claims 1-3, 5-12 and 16-18, now pending in this application, are in condition for allowance over the cited references. Accordingly, the applicants respectfully requests reconsideration and withdrawal of the outstanding rejections and earnestly solicits an indication of allowable subject matter. This amendment is considered to be responsive to all points raised in the office action.

When issuance of a Notice of Allowance is proper in the next action, the examiner is authorized to cancel the withdrawn claims, for which the applicant reserves the right to file a divisional application. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,



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